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Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States

Report of the Secretary-General

Addendum

Human resource development in small island developing States*

Contents

		Paragraphs	Page
	Introduction	1	2
I.	Progress made in human resource development	2–12	2
	A. At the national level	2–4	2
	B. At the regional level	5	2
	C. Support at the international level	6–12	3
	1. Bilateral contributions	7–8	3
	2. Multilateral contributions	9–12	3
II.	Constraints and problems in human resource development	13–18	4
III.	Priorities for action	19–23	4
IV.	Recommendations for the future programme of work	24–25	5

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Introduction

1. Despite variations in per capita income, small island developing States share important characteristics, one of which is small population size. With small populations, they experience great difficulties in developing the human resources required for sustainable development. With support from the international community, small island developing States have undertaken extensive activities during the past five years at the national, regional and international levels aimed at developing human resources. The present report highlights some of these activities and identifies priorities and measures for future action.

I. Progress made in human resource development

A. At the national level

2. The status of human resource development in small island developing States varies considerably. A number of small island developing States have high scores on the human development index; while others lag behind.[1] However, the available trend data suggest that in recent years all but one of the small island developing States have made progress in developing their human resources at the basic level that is necessary for building specialized technical skills for environmental management. In the implementation of the Programme of Action for the Sustainable Development of Small Island Developing States,[2] national actions have by and large focused on institution-building for environmental education, community participation and, to some extent, promotion of traditional knowledge. For example, in Cuba in 1995, the Ministry of Science, Technology and Environment was created, within which the Environmental Agency and its Centre for Information, Education and Public Environmental Awareness were set up.[3] In Barbados, close working ties have been forged among the Ministry of Education and Youth Affairs, the National Council for Science and Technology and the National Commission on Sustainable Development.[4] In Mauritius, the Government provides an environmental education programme to raise awareness of pollution problems.[5] In the Bahamas, school curricula at the primary and secondary levels have been revised to address environmental and development concerns. Environmental health, sanitation, ecosystems, recycling, energy saving, and safe drinking water are now fully covered in the curricula.[6] In the Pacific region, the University of the South Pacific now offers an interdisciplinary programme for an undergraduate Bachelor of Science degree in environmental studies. Student enrolment has increased substantially in the last few years. The demand has spawned other environmental study programmes, both degree and non-degree, as well as postgraduate.[7]

3. In a number of small island developing States, efforts have been made to promote research and development in conjunction with the harnessing of the potentials of endogenous technologies and traditional practices, particularly in areas such as agriculture, waste recycling, biotechnology and construction where traditional knowledge is of great relevance. Similar efforts have been made to encourage the dissemination of traditional knowledge and skills.

4. In countries like Barbados, the Bahamas, Mauritius, Sao Tome and Principe, Seychelles and many others, community participation has played an increasingly important role in alleviating poverty, promoting environmental awareness and achieving sustainable livelihoods. Women are being encouraged to take non-traditional jobs and to prepare for them through available education and training facilities. More than ever, women are being brought into the decision-making process, and appointed to key ministerial positions.

B. At the regional level

5. To overcome the constraints of inadequate capacity, small island developing States are making efforts to pool resources through regional cooperative arrangements so as to attain sustainable development objectives. The following are a few examples:

(a) A Caribbean project for adaptation to global climate change is under way, assisting 11 countries in strengthening regional capacity to monitor and analyse sea-level dynamics and trends. The project focuses on building the capacity of national and regional institutions to implement specific measures, administer information systems, research and monitor selected parameters, analyse data and manage the process of preparation for adaptation;[8]

(b) A Pacific Island Climate Change Assistance Project is being implemented through the South Pacific Regional Environmental Programme (SPREP), the South Pacific Applied Geoscience Commission (SOPAC), the University of the South Pacific and other institutions. SPREP has carried out studies on assessment of climate change impacts in 12 Pacific small island developing States; SOPAC

has assisted Fiji and Kiribati in carrying out studies of vulnerability to erosion and has run seminars on coastal monitoring in Tuvalu, Kiribati and Western Samoa;[9]

(c) In the Caribbean, the Organization of Eastern Caribbean States is providing various kinds of support to member States to alleviate the constraints of inadequate human resource capacity, including in technical assistance in environmental management, financial resources for training, technical information on natural resource management and the preparation of policy briefs;

(d) Regional cooperation in waste management, and in coastal and marine resources as well as in tourism has also been initiated. In the areas of hazardous and ship-generated wastes, training workshops have been organized in the South Pacific and Caribbean regions to enhance awareness and strengthen national capacities.

(e) In the Pacific, SPREP, in addition to its various technical assistance to Pacific small island developing States, is undertaking environmental law training activities in the framework of Capacity 21 programmes in selected islands, and has planned a workshop on environmental treaties and conventions involving all Pacific island countries.

C. Support at the international level

6. The international community has provided support through project funding or technical assistance. The projects cover a broad range of areas, including health care, education, and training in expertise in specific fields such as trade, coastal area management and maritime transport. A brief account of some of these activities is provided below.

1. Bilateral contributions

7. Information obtained from bilateral donors shows that they consider human resource development a key area for external support. Education and health-care projects have attracted substantial resources, with many projects devoted to teacher training, upgrading of educational facilities, including distance learning, and support to public health. For instance, during the period 1994–1998, Japan allocated US$ 57.8 million to several projects in Pacific small island developing States aimed at upgrading and expanding education facilities. Luxembourg, among others, provided funds for projects to strengthen the public-health service and promote primary health care.

8. Some bilateral donors have also emphasized the strengthening of major groups, especially women and trade unions. During the period 1994–1998, New Zealand, for instance, allocated US$ 23.6 million to various projects in South Pacific small island developing States to assist in community training and employment, strengthening women's non-governmental organizations, and promoting private sector development. Austria, Finland and Norway, among others, provided funds to various small island developing States to promote literacy of ethnic groups, support women's participation and strengthen trade union activities.

2. Multilateral contributions

9. Organizations within the United Nations system provide funding support and technical assistance to small island developing States in various areas of human resource development. For example, the United Nations Children's Fund (UNICEF), the United Nations Population Fund (UNFPA) and the World Bank have funded projects in small island developing States for maternal and child health care. The World Health Organization (WHO) has organized meetings and workshops in the Caribbean and Pacific regions to address issues related to health and environment. The United Nations Environment Programme (UNEP) and the United Nations Educational, Scientific and Cultural Organization (UNESCO) have provided training to participants from small island developing States in coastal, freshwater and marine resources management. Other United Nations bodies, such as the United Nations Conference on Trade and Development (UNCTAD) and the International Maritime Organization (IMO) have provided specialist training to technical personnel from small island developing States in their areas of competence.

10. UNDP through its Capacity 21 fund has provided support to Pacific and Caribbean small island developing States in strengthening their capacity for achieving sustainable development objectives. In the Pacific small island developing States, Capacity 21 projects have had a small but significant impact in raising awareness and in strengthening institutional capacity in a number of countries. In the Caribbean region, Capacity 21 projects have spawned several initiatives in participating countries, including the establishment of sustainable development councils and the launching of broad-based participatory processes in the formulation and implementation of sustainable development strategy.

11. The Economic and Social Commission for Asia and the Pacific (ESCAP) and the Economic Commission for

Latin America and the Caribbean (ECLAC) have developed significant programmes focusing on the small island developing States in their respective regions. They have run training courses for participants from small island developing States in various technical fields, as well as in areas directly related to human resource development such as environmental education, population and development, and women in development.

12. The Commonwealth Secretariat has been providing training opportunities to Caribbean, Pacific and other island countries on women and natural resource management; entrepreneurship development of women; primary health care and immunization; and transfer of environmentally sound technology and information technology.

II. Constraints and problems in human resource development

13. Despite national actions and international support, progress in human resource development has been inhibited by the inadequacy of financial resources and inadequate training facilities at the national level. Furthermore, support by international organizations is sometimes hampered by shortage of funds.

14. Inadequacy of financial resources is the most important obstacle. In addition to their general educational and health-care needs, small island developing States experience the need for specialized expertise in environmental management in a number of areas. While there is a consensus on the importance of human resource development, with funds having been channelled to this area, the resources made available are simply not sufficient to meet the immediate needs.

15. The inadequacy of human resource capacity, among other things, continues to impede progress in sustainable development. For example, the Government of Barbados has pointed out that strains on national human and institutional resources have hampered the efforts of Barbados to implement policies and programmes to address the issues of trade and environment.[4] The Government of the Bahamas has indicated that the country does not possess the human and financial resources to expand and further develop the sustainable use of its natural resources.[6] In Seychelles, lack of well-trained personnel has been identified as a key factor constraining the effective management of national parks.[10] In Haiti, no research scientists or engineers work full time in the field of environment and development.[11]

16. In several small island developing States, lack of resources has resulted in the curtailment of training opportunities. At a time when small island developing States are struggling to keep abreast of globalization which is making fresh demands on human resources, lack of training opportunities hampers the supply of new skills and places the existing capacity, already limited, under greater strain. A number of small island developing States have identified lack of training opportunities as a key bottleneck in respect of building up and maintaining local capacity. The implications of shortage of funds are no less serious for regional projects. Regional organizations often cannot make commitments to providing much-needed training to member countries. The demands are too many; the resources at their disposal too few. Several regional organizations need to strengthen their own human resources before they can contribute effectively to the development of the human resources of member States.

17. Within small island developing States, Governments have increasingly realized that they need to establish effective coordination mechanisms. Often several ministries are involved in capacity-building with inevitable duplication of efforts. Some have acknowledged that there are too many agencies dealing with sustainable development, and there is an urgent need for enhancing coordination both at policy and at operational levels.

18. Furthermore, Governments need to deal with the issue of the retention of trained manpower. National reports indicate that trained manpower often emigrates, thus giving rise to new needs for training. While no systematic data exist on the turnovers of trained manpower, thereby making it difficult to gauge their magnitude, the problem is considered serious in some sectors like information technology. There is evidently a need for Governments to devise incentives to retain trained manpower and to attract nationals with specialized skills who are working abroad.

III. Priorities for action

19. Given their demographic constraints, small island developing States need to build a well-educated, highly adaptable and environmentally knowledgeable workforce as the mainstay of national sustainable development. Governments should continue to accord priority to human resource development in all its dimensions — health care, basic education, environmental education, technical training and resource management in specific fields. For those small island developing States that have achieved high enrolment ratios at the primary and secondary levels, efforts should be

made to strengthen higher education, including in the specialized fields of natural and environmental resource management. Equally important, Governments should create conditions, including through regional mechanisms, to retain technically skilled manpower and to attract expertise from overseas.

20. Resource mobilization for human resource development should continue to be a top priority. Governments should look into domestic funding sources through the use of economic instruments such as appropriate environmental taxation and should allocate sufficient funds for education and training. Likewise, the international community should maintain the priority it has accorded to human resource development in small island developing States by channelling increased resources to poverty alleviation, health care, education, community participation and training.

21. The need for coordination in human resource development should be addressed at the highest political level. There should be mechanisms facilitating information exchanges so that all stakeholders are aware of the current levels of, and future needs for, specific skills and opportunities. Renewed efforts should be made to ensure cooperation and coordination among ministries, local and national authorities and donors. Every effort should be made to identify opportunities for synergy and for cost-saving. Distance education and use of the Internet should be supported and expanded. Cost-effective mechanisms for exchanging information and experiences within and between countries should be set up or strengthened so as to fully tap the lessons learned from past experiences.

22. Small island developing States should further strengthen regional cooperation for human resource development, increase the effectiveness of such cooperation through systematic identification of needs for specific skills, and increase the efficiency of regional resource use through better coordination.

23. Entities of the United Nations system should strengthen their support by increasing their operational activities in technical training. Areas where local capacity is relatively small should be accorded priority in funding and provision of technical assistance.

IV. Recommendations for the future programme of work

24. The Commission may wish to invite Governments of small island developing States to include in their national reports to the Commission a section on the status of the human resource needs of small island developing States with reference to specific sectors so as to facilitate the Commission's consideration of the relevant issues.

25. The Commission may invite bilateral donors to update annually information on financial resources allocated to human resource development in specific areas so as to assist the Commission in monitoring the appropriateness and levels of resource flows into this important area.

Notes

[1] See United Nations Development Programme, *Human Development Report, 1998* (New York, Oxford University Press, 1998), Human development indicators, table 5.

[2] *Report of the Global Conference on the Sustainable Development of Small Island Developing States, Bridgetown, Barbados, 25 April–6 May 1994* (United Nations publication, Sales No. E.94.I.18 and corrigenda), chap. I, resolution 1, annex II.

[3] See Cuba: country profile (E/CN.17/1997/Misc.67).

[4] See Barbados: country profile (E/CN.17/1997/Misc.57).

[5] See Mauritius: country profile (E/CN.17/1997/Misc.4).

[6] See Bahamas: country profile (E/CN.17/1997/Misc.66).

[7] See report of the Commission on Sustainable Development on activities to implement the Barbados Programme of Action in the Pacific region, prepared by the South Pacific Regional Environmental Programme (SPREP) jointly with the ESCAP Pacific Operations Centre and with the financial assistance of the Governments of Australia and New Zealand.

[8] Global Environment Facility, *Quarterly Operational Report*, November 1996.

[9] Global Environment Facility, *Quarterly Operational Report*, November 1996, and report of the Commission on Sustainable Development on activities to implement the Barbados Programme of Action in the Pacific region, prepared by SPREP jointly with the ESCAP Pacific Operations Centre.

[10] See report entitled "Achieving sustainable development: environmental management plan of the Seychelles, 1990–2000", prepared by the Government of Seychelles with the advice and assistance of the United Nations Environment Programme, the United Nations Development Programme and the World Bank.

[11] Haiti: country profile (E/CN.17/Misc.36).

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Progress in the implementation of the Programme of Action for the Sustainable Development of Small Island Developing States

Report of the Secretary-General

Addendum

Management of coastal and marine resources in small island developing States*

Contents

		Paragraphs	Page
I.	Introduction	1–2	2
II.	Problems of marine and coastal areas	3	2
III.	Progress achieved in the sustainable management of coastal and marine resources	4–10	3
IV.	Constraints	11	4
V.	Priorities for future action	12–13	5
	A. National and regional levels	12	5
	B. International level	13	6

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I. Introduction

1. The coastal area of small island developing States plays a very important part in their socio-economic development. Most activities take place in coastal areas, either because the island is too small, making it a coastal entity, or because the high areas of larger islands are steep thereby necessitating that the population settle on the gently sloping coastal areas.

2. Two important industries in most small island developing States are tourism and fisheries, which rely heavily on coastal and marine resources. Tourism is relied upon by most small island developing States to make an important contribution to their gross domestic product (GDP), employment and foreign exchange earnings. It is a fast-growing industry which is overtaking traditional industries (for example, sugar) as a source of revenue. However, the tourist industry is susceptible to the deterioration of the fragile environment on which it depends. In contrast to their land area, the marine area under the jurisdiction of small island developing States is generally very large. The ocean is regarded as a source of wealth and nutrition. At the present, most small island developing States are particularly interested in exploiting their fisheries resources, which contribute to incomes and their protein needs. While these States generally face similar constraints in the development of their coastal and marine resources as do mainland areas, they have additional constraints, the most important being their small land area and limited natural and human resources, which limit their options for development.

II. Problems of marine and coastal areas

3. The problems of management of coastal and marine resources are similar for most small island developing States — they differ primarily only in terms of magnitude. A few small island developing States, usually the larger ones, face greater problems on account of their larger number of development activities which include agriculture, industry and mining. The problems which are common to all islands are:

(a) **Beach erosion**. The biggest cause of beach erosion is the mining of sand and coral, which are limited in supply but for which demand is very high for construction purposes; some small island developing States have instituted regulations for controlling this activity, which have not always been enforced; the poorly regulated removal of sand and vegetation in shore areas can result in erosion and an elevated risk of storm damage; artificial barriers used to control beach erosion are costly to build and poorly constructed barriers are ineffective;

(b) **Loss of shoreline**. Shoreline and marine habitats serve to protect the shoreline from erosion and flooding. Most beach hotels and water-based tourism infrastructure in small island developing States are structures built on the beach or in the water; the infrastructure includes piers, marinas, jetties and artificial beaches, which can lead to loss of shoreline; since all near-shore and shore areas exist in dynamic balance, a change in one parameter can affect the characteristics of the site and subsequently its viability;

(c) **Habitat degradation**. Habitats, such as coral reefs and mangroves, are increasingly being degraded through unsustainable development patterns; poor land use causes siltation; the physical removal of coral reef and the discharge of industrial, agricultural, and sewage effluents contribute to the degradation of habitats;

(d) **Pollution of marine and coastal resources**. Pollution of marine and coastal areas from land-based sources of pollution is a major issue for small island developing States; the pollution is largely from domestic sewage, industrial effluents and agricultural run-off; in a few larger islands (for example, Jamaica and some Melanesian countries), pollution from mining effluent is also a cause for concern;

(e) **Sustainable use of the exclusive economic zone (EEZ)**. The United Nations Law of the Sea has greatly increased the EEZ of small island developing States. In some cases EEZ can be hundreds of times the land area of a small island, making it an important potential resource; however, these States often do not have the human resources and technological capacity to exploit this resource fully and in a sustainable manner;

(f) **Extension of EEZ boundaries**. According to the United Nations Convention on the Law of the Sea, the existing EEZ boundaries may be further extended on the basis of a component of natural progression; this is important for small island developing States with limited land resources and which look to the EEZ as an additional resource; these States often do not have the capability, however, to define the seabed boundaries in areas where such an extension of boundary might be possible;

(g) **Management of fisheries**. Though most small island developing States have fisheries policies and some type of institutional framework for the management of fisheries resources, they often cannot manage this resource

in a sustainable manner; this is because they do not have information on the size of fish stocks and the movements of fish within EEZ; furthermore, they do not have the capacity to monitor EEZ and thereby cannot address the problem of illegal fishing by foreign companies effectively.

III. Progress achieved in the sustainable management of coastal and marine resources

4. It is now about five years since the adoption of the Programme of Action for the Sustainable Development of Small Island Developing States.[1] During this period, small island developing States in all regions have made some progress towards sustainability of coastal and marine resources. Particularly significant in this regard is the adoption of regional action plans reflecting the priorities of small island developing States, their capabilities and the resource needs. Action plans providing a framework for implementing the Programme of Action in the coastal and marine area have been given a very high priority in all regions.

5. Awareness of integrated coastal area management has also increased. More countries have been adopting the concept of integrated coastal area management (ICAM). Guidelines have been developed and pilot projects have been carried out in all small island developing States regions, in most cases, with donor assistance. The National Environment Management Strategies provide a framework for implementing ICAM. For instance, Cape Verde, Fiji and Kiribati and other small island developing States have developed plans and are at different levels of their implementation. Some countries have established specific institutions for coastal zone management. One example is the Barbados Coastal Conservation Unit which has produced a draft Coastal Zone Management Act. Resource surveys, mapping and hazard assessments are other activities that have been carried out within the framework of ICAM.

6. At the regional level, ongoing activities conducive to the sustainable management of coastal and marine resources include training of personnel, acquisition of equipment and facilities, production of stock assessment data and other resource inventories, upgrading of skills for management of marine parks, studies on pollution, information exchange and sharing of experience from within and outside the regions, and production of ICAM plans using regional guidelines. An example of the latter is the Guidelines for Integrated Planning and Management of Coastal and Marine areas in the Wider Caribbean Region, prepared by the Caribbean Environment Programme and the Island Resources Foundation.

7. In the area of fisheries management, all small island developing States have institutions responsible for fisheries. Most South Pacific countries have adopted policies on the sustainable exploitation of fisheries. Through regional cooperation, small island developing States can collectively negotiate fisheries agreements with foreign companies. To this end, the Forum Fisheries Agency of the South Pacific region provided technical support to small island developing States for negotiation of the South Pacific Tuna Treaty with the United States of America. Small island developing States in the Indian Ocean have initiated an integrated fisheries project, focusing on research, stock assessment, monitoring, control, surveillance, preservation of species and training. The Indian Ocean Commission is developing an oil spill contingency plan as part of its efforts to control marine pollution from sea-based activities.

8. All small island developing States regions have adopted an international coral reef initiative (ICRI) strategy. Most have networks to monitor the health of the reefs. The Indian Ocean Commission and the South Pacific Environment Programme (SPREP) have developed guidelines for monitoring coral reefs, and the current bleaching of coral reefs is being studied by a number of countries, including small island developing States.

9. Regional organizations have played an important role in information collection and exchange. Numerous publications on the various disciplines of coastal and marine management have become available. These, assisted by public information material such as posters, audio-visual material, brochures and leaflets, have contributed to awareness-raising. Many networks and nodes of information exchange have been established throughout the South Pacific region. These include the Pacific Environment and Natural Resource Information Centre, which was created to assist countries with the collection, assessment and reporting of environmental information relevant to small island developing States.

10. Small island developing States also have been the recipients of formal and informal training efforts to improve their capacity to implement sustainable coastal and marine resource management from regional and international institutions. Through regional organizations, many of these States have been able to mobilize financial resources. One example is the South Pacific project, which has secured US$ 20 million. Other agencies (for example, the Indian Ocean Commission and the Organization of the Eastern

Caribbean States) have also been instrumental in mobilizing financial and technical resources from organizations such as the United Nations Environment Programme, the United Nations Development Programme, the Food and Agriculture Organization of the United Nations, the European Union and the United States Agency for International Development.

Major initiative

Development and implementation of the Strategic Action Programme of the Pacific Small Island Developing States

The small island developing States of the South Pacific region have secured funding from the Global Environment Facility (GEF) to prepare a Strategic Action Programme (SAP). The long-term objective of the GEF project is to conserve and manage the coastal and ocean resources in the South Pacific region in a sustainable manner. The Strategic Action Programme was prepared, using national task forces coordinated by a Regional Task Force. The participating countries or areas are Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.

The small island developing States of the South Pacific region have secured further funding of some US$ 20 million to implement SAP, with GEF contributing US$ 12 million of the total. The project's activities are designed to encourage comprehensive, cross-sectoral, ecosystem-based approaches to prevent and/or mitigate existing and imminent threats to international waters. The two interlinked components of SAP are integrated coastal and watershed management and ocean fisheries management.

IV. Constraints

11. In the implementation of the sustainable development of coastal and marine resources, implementing agencies and governments of small island developing States have been faced with a number of constraints. The common ones are:

(a) **Uncoordinated delivery mechanisms between the agencies**. The coordination between implementing agencies working in this priority area appears inadequate; uncoordinated approaches duplicate activities and overload the capacities of Governments which already suffer inadequate levels of human, financial and institutional resources;

(b) **Inadequate coordination at the national level**. Despite the fact that most small island developing States have adopted the ICAM concept in principle, coordination of activities between the implementing agencies, private sectors and the community has yet to materialize; inadequate coordination at the national level has reduced the effectiveness of efforts made; few small island developing States have a specialized agency focusing on coastal zone management; as a result, the trend has been to put more emphasis on coastal zone management through exploring options for strengthening existing agencies and collaborating mechanisms among relevant agencies, or to set up specialized units with prime responsibility for coordinating coastal zone management along with their other functions;

(c) **Inadequate capacity at the national level for implementation**. The number of people with formal training in environmental subjects is still very small in most small island developing States with the result that participation in decision-making by major groups is limited, as is the ability of these States to carry out fundamental environmental work;

(d) **ICAM not integrated into national development plans**. Most efforts on integrated coastal area management, though technically innovative and successful in various cases, have evolved at the local level, leaving them isolated from the mainstream of national development planning; furthermore, such efforts have not attracted substantial funding, making the initiatives less effective than they could be;

(e) **Inadequate financial resources from national budgets and the international community**. The financial resources available to small island developing States for implementing ICAM have been inadequate to date; much effort has been expended in developing guidelines and plans; however, financial resources for implementing the plans have been very scarce; for example Yap State of the Federated States of Micronesia developed a system of integrated management that was sensitive to both the traditional management practices and modern technology; the financial resources for implementing the plan were exhausted prior to completion of its implementation;

(f) **Lack of economic tools**. ICAM is often seen as an environmental rather than a sustainable development programme; thus, it has often received limited funding from national budgets; further, many small island developing

States do not have the environmental tools (for example, indicators for integrating environmental considerations with economic development) for decision-making, which would allow Governments to estimate the true cost of environmental degradation;

(g) **Inadequate scientific and technological means for implementation**. Because of lack of island-specific studies, small island developing States often use inappropriate technologies, designed for large continental lands (for example, in waste water treatment); unfortunately, technology based on concepts and criteria appropriate for large countries is not necessarily suitable for the needs of small islands; such industries as tourism and fish processing are concentrated on coastal areas, thereby contributing to coastal pollution; these pollutant loads can be greatly reduced at their source by the application of cleaner production technologies; small island developing States, however, often do not have access to the appropriate technology.

V. Priorities for future action

A. National and regional levels

12. Priorities for future action include:

(a) **Reducing pollution from land-based activities**. Preparation and implementation of national action plans for controlling marine pollution from land-based activities consistent with the goals of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities;

(b) **Promoting integrated island management**. Promoting sustainable use of resources through establishment of integrated island management; a lead agency, authority or ministry needs to be established and be given the necessary authority to ensure that an integrated approach is adopted and that all stakeholders are fully involved through to the implementation stage;

(c) **Development of a regulatory framework**. Development and implementation of appropriate regulatory measures and institutional mechanisms for (i) reduction, prevention, control and monitoring of pollution; (ii) safe and efficient management of toxic and hazardous wastes; (iii) solid and liquid waste management; (iv) proper management of waste disposal sites; and (v) sustainable sand and coral mining; the regulatory regimes should be based on the best available knowledge, which small island developing States often lack; the States should also attempt to improve data-collection programmes; data storage and retrieval systems also need to be developed and maintained; improved national capacity is also needed and will require technical training in data collection and for the development and enforcement of regulatory regimes;

(d) **Monitoring network**. Monitoring and surveillance of fish stocks in the regions of small island developing States to ensure sustainable management of living marine resources; these States should work to strengthen their monitoring networks at both the national and regional levels;

(e) **Negotiating fisheries agreements**. Development or strengthening of regional institutions to provide technical assistance to small island developing States for negotiating agreements with foreign fishing companies in order to maximize returns from the fisheries of the regions;

(f) **Control of sand and coral mining**. Unless substitutes for sand and coral for building material are found, small island developing States will have a continuing problem of beach erosion from sand mining; thus alternative materials must be developed and their active use promoted;

(g) **Human resources development**. Building adequate manpower with the requisite level of skill for effective integrated island management; small island developing States should assess their training needs and develop a training programme, involving the private sector, non-governmental organizations and Governments; training should not be limited to technical experts; it should include local communities, for example, fishermen, tourist hotel operators, managers of industries located in coastal regions and farmers;

(h) **Extension of EEZ boundaries under article 76 of the United Nations Convention on the Law of the Sea**. Development and strengthening of capacity to collect/analyse essential data, and to negotiate extension of their EEZ; extension of EEZ boundaries will expire in four years' time; by then all interested small island developing States must have staked their claims to specific areas; high quality bathymetric/swath mapping data are essential for this purpose;

(i) **Development of EEZs.** Development of a policy and adoption of effective methods for the sustainable development of EEZs; the small land area of small island developing States has resulted in efforts to extend their activities towards the sea (for example, reclamation of land, marine-based tourism, exploitation of minerals and oil); these plans will have significant impacts on the fragile and vulnerable marine ecosystems of these States if not

implemented with the utmost precaution, based on a systematic approach.

B. International level

13. Future actions at the international level include:

(a) Assisting small island developing States to (i) establish and/or strengthen new institutional and administrative arrangements for the development and implementation of integrated island management plans; (ii) modify existing ICAM into integrated island management, including implementation of pilot projects; and (iii) ensure capacity-building for implementing integrated island management;

(b) Strengthening the capacity of small island developing States to develop and implement national and regional action plans consistent with the goals of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities;

(c) Facilitating the transfer of technologies (for example, cleaner production) to reduce pollutants at their source, and appropriate methods for treating sewage, industrial wastes and solid wastes;

(d) Supporting the development of guidelines and the implementation of pilot projects for community-based management of coastal resources, as well as the development of alternative livelihoods, for example, aquaculture and ecotourism;

(e) Enhancing the capability of small island developing States to (i) assess and monitor fish catch and the processing and marketing of fish by foreign and domestic fishing companies; (ii) develop a legal framework for sustainable fisheries activities; and (iii) develop management plans and policies for assessing, monitoring and exploiting both the living and non-living resources in the EEZ;

(f) Assisting regional institutions to strengthen their capacity to negotiate agreements related to the use of marine resources;

(g) Establishing programmes to initiate and/or strengthen the capacity of small island developing States to collect the necessary data and prepare documentation for extending their EEZ beyond the current 200 mile limit;

(h) Preparing versions of conventions related to the sustainable use of marine and coastal areas that are easily intelligible to laymen; such material should show (i) linkages between the different agreements and (ii) benefits to and responsibilities of small island developing States.

Notes

[1] *Report of the Global Conference on the Sustainable Development of Small Island Developing States, Bridgetown, Barbados, 25 April-6 May 1994* (United Nations publication, Sales No. E.94.I.18), chap. I, resolution 1, annex II.

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Addendum

Management of coastal and marine resources in small island developing States

Corrigendum

1. **Paragraph 3 (f)**

Replace the existing text with the following:

(f) **Delimitation of the continental shelf beyond 200 nautical miles.** According to article 76 of the United Nations Convention on the Law of the Sea, the continental shelf of a State may extend beyond 200 nautical miles where there is natural prolongation of the continental margin beyond this limit and such area of prolongation satisfies the technical criteria set out in that article; this is important for small island developing States with limited land resources and which look to the continental shelf as an additional resource; these States often do not have the capability, however, to define the seabed boundaries in areas where such an extension of boundary might be possible;

2. **Paragraph 12 (h)**

Replace the existing text with the following:

(h) **Extension of continental shelf limits beyond 200 nautical miles.** Information on the limits of the continental shelf beyond 200 nautical miles must be submitted by 2004 by the States concerned to the Commission on Limits of the Continental Shelf, which was established by the United Nations Convention on the

99-05344 (E) 260299

Law of the Sea and is empowered to make recommendations to States. The limits established on the basis of those recommendations shall be final and binding. However, reliable and accurate information on the geology and geomorphology of these areas based on bathymetric and seismic data is essential for this purpose. Thus, small island developing States which do not have capabilities to do so should obtain assistance to determine if they are *prima facie* eligible and, if they are, to collect the relevant data and make requisite presentations to the Commission by the currently stipulated cut-off date of 2004;

3. **Paragraph 13 (g)**

Replace the existing text with the following:

(g) Establishing programmes (i) to make a preliminary assessment as to which small island developing States are *prima facie* eligible to establish limits beyond 200 nautical miles and to advise accordingly; (ii) to provide advice and assistance to eligible States where required, to gather available information and determine what additional information is required by way of ocean surveys, and to assist in finding cost-effective solutions on the basis of relevant international experience and the requirements of the Commission on the Limits of the Continental Shelf; and (iii) to initiate measures, assist and/or strengthen the capacity of those States to collect the necessary data and prepare documentation for extending their continental shelves beyond the 200-nautical mile EEZ;

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Addendum

Sustainable tourism development in small island developing States*

Contents

		Paragraphs	Page
I.	Progress achieved in the implementation of sustainable tourism development in small island developing States	1–4	3
II.	Constraints encountered to sustainable development of tourism	5–9	3
III.	Emerging trends, problems and adverse impacts	10–17	4
IV.	Looking to the future: priorities and policy needs	18–24	5

* The report was prepared by the Department of Economic and Social Affairs of the United Nations Secretariat, with the assistance of the World Tourism Organization and the United Nations Environment Programme, in accordance with arrangements agreed to by the Inter-Agency Committee on Sustainable Development. It is an update of document E/CN.17/1996/20/Add.3 and the result of consultation and information exchange between United Nations agencies, interested government agencies and a range of other institutions and individuals.

99-01808 (E) 080299

Annexes

I. Major initiatives for sustainable tourism development in small island developing States, by location 7

II. Major initiatives for sustainable tourism development in small island developing States, by target area 10

III. Selected indicators of tourism in small island developing States 12

I. Progress achieved in the implementation of sustainable tourism development in small island developing States

1. Tourism is often identified as a promising growth sector in small island developing States. It offers one of the few opportunities for economic diversification in very small islands. It has many linkages with other economic sectors, and if integrated into national development plans with adequate provisions for intersectoral linkages, it can contribute to the growth of all tourism-related activities in all of the major economic sectors — agriculture, including fishing, industry and services, including transportation. Currently, the extent of tourism activities in small island developing States varies widely between geographical regions, as well as among countries within regions. Likewise, the economic benefits derived from tourism are diverse. In some small island developing States, tourism has become the major contributor to gross domestic product (GDP), while in others it is still relatively undeveloped (see annex III).

2. On a regional level, in the Mediterranean, Malta and Cyprus are outstanding mature destinations and are already facing a certain tourism saturation. This is also the case of the Bahamas, Cuba, the Dominican Republic and Jamaica in the Caribbean. In the latter region, many islands are rethinking their future strategies in a tourism sector that has entered its mature stage and has become one of the economic pillars in the region, in many cases contributing more than one third of gross national product (GNP). In Asia and the Pacific, tourism is attaining significant levels in the small island States of Fiji, Vanuatu, Papua New Guinea, Samoa, the Cook Islands and Maldives but is encountering developmental difficulties in some, such as Kiribati, Tonga and Tuvalu. In the African region, while Seychelles and Mauritius have revised their policies to raise the quality of their tourism product, other islands, such as Sao Tome and Principe, Cape Verde and the Comoros, are seeking to strengthen their own tourism development programmes.

3. The main objectives of the promotion of tourism as a growth sector are to accelerate the growth of national incomes, gainful employment, foreign exchange earnings and government tax revenues. A thorough evaluation of the contribution of tourism in small island developing States with respect to these parameters is currently hampered by the incompleteness of data. In view of the constraints faced by small island developing States in promoting exports of goods in an increasingly competitive and fast-changing international economy, by and large those States are giving increasing importance to tourism as a way of raising their foreign exchange earnings. Tourism creates employment directly in the tourism industry, as well as in industries providing goods and services to the tourism industry. Current data, however, is not available on the overall contribution of tourism to employment in small island developing States.

4. In spite of the constraints encountered, many small island developing States have established initiatives to balance tourism activities with broader economic, social and environmental objectives at the regional, national and local levels. In particular, major efforts have led to (a) the strengthening of regional cooperation on strategies, standards and capacity-building for tourism, with the assistance of international institutions, the private sector and non-governmental organizations in the area of human and institutional capacity-building; (b) increased use of user charges, particularly for environmental protection; (c) formulation of integrated national action plans, strategies and policies which include tourism, in particular its environmental aspects; (d) the establishment of frameworks that allow local communities to participate and have greater control over tourism development in their localities. A summary of major initiatives taken by a number of small island developing States to achieve sustainability of the tourism sector is annexed to the present report, by location (annex I) and by target area (annex II).

II. Constraints encountered to sustainable development of tourism

5. A necessary requirement for the pursuit of sustainable tourism development is an effective legislative framework. Despite progress in the enactment of environmental legislation, its effectiveness continues to be impaired by weaknesses in the institutional frameworks for enforcing legislation, lack of standardization of legislation and the obscurity of regulations.

6. The relatively larger small island developing States have the human resources potential to support a number of economic sectors viably, and thus to benefit from linkages of those sectors with the tourism sector. The smaller ones, however, do not have such potential, and will therefore have to be more reliant on imports to meet the material demands of the tourism sector. Other things remaining equal, the net benefits — i.e., domestic value-added per visitor — derived by the smaller islands from tourism will be relatively smaller.

7. Most small island States face the persistent problem of inadequate supply of trained manpower, particularly in government agencies responsible for the implementation and monitoring of standards and environmental regulations in tourism. The shortage of skilled human resources is compounded by the dispersion in some States of responsibilities among several government agencies.

8. The majority of small island developing States suffer from a lack of local capital for bulky investments, and in many cases the absence of a significant local entrepreneurial class. The financing required for the development of the tourism sector is therefore obtained largely through foreign investment. Special efforts are made by Governments of small island developing States to attract foreign capital through the provision of tax concessions, tax holidays, building concessions and other incentives to foreign investors, which reduce the tourism incomes accruing to small island developing States.

9. The main physical infrastructural requirements for tourism development include the following: effective transportation facilities, including airports and air and/or sea carrier links; reasonably good road networks; telecommunication links; reliable energy supply systems; freshwater supply systems; accommodation facilities; restaurants and entertainment sites. For many small island developing States, the inadequacy of those infrastructures is an obstacle to the development of the sector.

III. Emerging trends, problems and adverse impacts

10. According to estimates of the World Tourism Organization (WTO), the number of tourists can be expected to grow by 300 per cent (mean annual growth of 4.3 per cent) and international tourism earnings can be expected to grow by 500 per cent (mean annual growth of 6.7 per cent) over the next 21 years to 2020 (see Pratz (1998)). Based on 1995 data, regional projections indicate that small island developing States will also benefit from the global growth in tourism. In the wider Caribbean, travel and tourism output is projected to grow at an annual average rate of 3.6 per cent in real terms up to 2005 and to create 2.7 million jobs. A similar trend is expected for Asia and the Pacific. The region as a whole is projected to be the fastest growing area in world tourism activities up to the year 2005. The annual average real rate of growth of travel and tourism output in the region is estimated at 8.0 per cent up to 2005. In the African region, Mauritius and Seychelles have planned for further growth but have opted for up-market tourism. In Malta and Cyprus, the rate of growth of tourist arrivals has slowed down in the recent past. A second discernible trend that will shape tourism development in small island developing States in coming years is the growing interest in and demand for specialty tourism.

11. Sudden, rapid development of tourism can cause significant social disruptions in small island States. Pressures are exerted on households and communities by the upward pressure on land prices, and on prices of foodstuffs and household items. Among other things, potential long-term effects could be a reduction in the living standards of high proportions of island populations and a sense of alienation brought about by their lack of access to limited land resources. Tourism is a labour-intensive activity that does not require a high level of specialization, and if well managed and of the proper size, it may exert a strong attractive force on the rest of the island's economic system, including conservation of certain traditional activities, such as agriculture and fishing, and preservation of island's cultural heritage and natural assets.

12. But if it is not adapted to local characteristics or if it exceeds carrying capacity, tourism may generate a number of adverse impacts: polarization of islands' economic systems, with the risk of overemphasis on that single sector to the detriment of other strategically important economic activities; demographic imbalances and cultural tensions induced by disproportionate tourist-to-resident ratios and external labour migrations; and deterioration of the environment due to increased human pressure on the natural environment, local resources, and terrestrial and marine biodiversity.

13. The fragile ecosystems of small island States and their generally more limited scope for pursuing alternative development strategies make concerns for the environmental impact of tourism very acute, particularly because the sector, which is almost totally dependent on the natural environment, is viewed by many small island developing States as a fast route to social and economic development. The principal tourism-related environmental difficulties confronting small island developing States are several. The environmental impacts of tourism are attributable to the development of tourism infrastructures and facilities and to the impacts of tourists' activities. Rising prices of building land increase the pressure to build on agricultural land and land under forest cover. Deforestation and intensified or unsustainable use of land cause erosion and loss of biological diversity.

14. Examples abound of damages caused by the disposal of untreated effluents into surrounding areas of land and sea.

Pollution of scarce inland freshwater resources is one such example. The loss of valuable marine life, the destruction of coral reefs and the siltation and erosion of coastal beaches, on which island tourism highly depends, are others. Pollution from ship-generated wastes is also a major cause for concern for small island developing States. Waste management and waste-water treatment are becoming critical issues since wastes are produced in increased quantities and there is not sufficient land to locate adequate treatment facilities. Inadequate treatment has major effects on various economic sectors, in particular fisheries and tourism.

15. Tourism as a mainly coastal development has already had a number of adverse impacts on small island developing States. In Mauritius, Seychelles, Malta, Cyprus and several islands in the Caribbean, the previously unchecked construction of tourism facilities along their coastlines resulted in the despoliation of much of the originally pristine beauty of these areas, and in the degradation of rich coastal resources in the form of fisheries, coral reefs, mangrove forests, sea beds and dune systems.

16. Another serious problem is the inadequacy of water supply. This is most severe in the low-lying atolls that have little opportunity for surface-water catchment and storage. The supply of freshwater relative to the growing demand from agriculture, industry and households is becoming an acute problem in small island developing States generally. Added to this is the growing competition of limited water resources from tourism, which is extremely water-intensive.

17. There is a growing consensus among scientists that global warming is increasing. In small islands and coastal areas in general, the persistence of this trend would cause the inundation of coastal and some inland areas, threatening sanitation systems and freshwater supplies as seawater infiltrates subterranean water tables, with possibly catastrophic consequences for island tourism.

IV. Looking to the future: priorities and policy needs

18. Experience has shown that integrating international tourism development with sustainable island development requires the ability to bring into play the following factors, among others, over the short and medium terms: (a) a social climate and natural and cultural tourism resources attractive to international tourists; (b) international/regional accessibility in terms of distance, time, price and adequate means of transport for the targeted tourism sector; (c) the capacity of infrastructure, services and accommodation quality to underpin suitable expansion of tourism activities in traditional or newly established tourism centres; (d) availability of investment capital for island tourism development; (e) human resources (businessmen, professionals, labour); and (f) political and operational preparedness to support tourism on the part of the island Government.

19. Many conventional models of tourism have become obsolete over the past 30 years, not only because of the limitations intrinsic to their life cycles and economic inefficiencies over the medium term, but also because of their impact on the cultural identity and quality of life of island societies. Integrated and environmentally and culturally conscious tourism planning can make tourism compatible with the conservation of the main ecosystems and with the preservation of historical-cultural heritage. Increasing community participation in decision-making is critical to achieving social and environmental objectives. Furthermore, it is important to ensure that financial resources are available. This can be achieved through direct government policies, joint ventures with local private initiatives, and foreign investment from regional and international public and private banks.

20. In order to orient tourism and island development towards sustainability new criteria, instruments and lines of action must be created and implemented, taking into account tourism carrying capacity. A positive interaction should be sought between tourism and environmental, sociocultural and economic factors, requiring integrated long-term strategies. Delaying the introduction of policies to promote sustainable tourism until the emergence of economic problems and cultural or environmental degradation can make it very difficult to take corrective actions.

21. Specific policies and measures for enhancing economic benefits from tourism include (a) diversifying the tourism product, enhancing its quality and increasingly targeting the upper segment of the tourist market; (b) strengthening linkages of other economic sectors with tourism so that domestic production can viably provide for the consumer needs of tourists to the maximum extent possible; (c) increasing the participation of nationals in the tourism sector by encouraging domestic investments, and, as necessary, joint ventures with foreign investors, so as to minimize the proportion of profits generated by the tourism sector that are repatriated by foreign investors; (d) encouraging the maximum use of local materials in resort construction so as to reduce the imports of construction materials; (e) increasing investments in the training of local people for the tourist industry in order to reduce dependence on foreign entities, particularly in the area of overseas

promotion and marketing, ground handling and domestic operation of tourism services; (f) minimizing financial incentives granted to foreign investors, by reducing national risks.

22. Measures for coping with the adverse social and cultural impacts of tourism include (a) efforts to keep the ratio of the visitor population to the local population at an acceptable level through appropriate diversification of the tourism product and the tourist market, particularly if mass tourism has been promoted for a long time in the past; (b) effective educational programmes to raise the awareness of the local population about the good and bad aspects of tourism; (c) effective countrywide security measures against crime and drugs, particularly in areas most frequented by tourists.

23. Measures for coping with environmental impacts include (a) development of a multidisciplinary approach for rigorous vetting of tourism development proposals, taking into account prospective cumulative impacts of tourism development, and establishment of environmental standards for approval of projects; (b) appropriate review and revision of existing taxes and subsidies to ensure that they are in fact conducive to sustainable development, and development of additional economic instruments to better internalize environmental costs; (c) imposition of appropriate user fees for the use of national terrestrial land marine parks and reserves, and earmarking the accrued receipts for purposes of improvement and management of sensitive areas; (d) inducing the tourism industry, through appropriate user charges, to meet the full cost of freshwater that it uses, and to contribute adequately to solid waste management and cleaning of beaches; (e) implementing a sustainable marketing strategy in cooperation with all partners involved in the tourism industry; and (f) encouraging voluntary initiatives and adherence to codes of conduct by the business community.

24. The foregoing national measures need to be supplemented by measures at the regional level, including (a) the implementation of a sustainable marketing strategy at the regional level, and (b) the adoption of uniform incentives at the regional level to reduce competition among small island developing States to attract foreign capital. National and regional measures need to be supplemented by international measures, including (a) provision of international assistance for the development of basic physical infrastructures, such as airports and harbors, roads, telecommunications systems and freshwater systems to small island developing States, especially the least developed among them; (b) provision of assistance to regional tourism organizations in order to increase their effectiveness; and (c) formulation, ratification and enforcement of a universal or at least a regional code of conduct for the tourism sector at the intergovernmental level.

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F. Pratz (1998). Tourism, environment and sustainable development in islands: 15 ideas and nine cases for debate. Paper presented at an international conference on sustainable tourism in small island developing States and other islands, Lanzarote, Canary Islands, October 1998.

United Nations (1996). Progress in the implementation of the Programme of Action for the Sustainable Development of Small Island Developing States: sustainable tourism development in small island developing States. Document E/CN.17/1996/20/Add.3. 29 February.

UNEP (1998). Input to the present report.

WTO (1998). Input to the present report.

Annex I

Major initiatives for sustainable tourism development in small island developing States, by location

Location	*Goals*	*Favourable key factors*	*Problems encountered*	*Measures adopted*	*Successful outcomes*
Mauritius	To enhance cohesion among economic development, sociocultural change and island ecology	Island natural and cultural resources Ready air access Readily available funding Developed infrastructure and complexes	Severe environmental impact (mainly along the coast)	Establishment of the Ministry of the Environment and Quality of Life Initiatives designed to enhance cohesion among sectors of the economy Master tourism plan to ensure sustainability Legislative measures for conserving the environment in tourism areas	Intense tourism development Diversification of island economy
Maldives	Rapid tourism development: planning of physical plants and incentives for foreign capital investment and reduction of environmental impact	"Isolated tourism enclave" model Easy air access Long-term foreign financing for sector development	Little integration between tourism and the rest of the island economy Insufficient employment of the island population in the sector Severe environmental impact	Partial moratorium on tourist accommodations Regulations strengthened Environmental Protection and Conservation Act enacted Environmental impact studies carried out and work on development indicators initiated Measures put in place for the protection of coral reefs and coastal systems and the conservation of ecosystems	Impact of foreign cultures contained Rapid development of the sector Contribution to the economy: 30 % of government revenue, 11 % of jobs, 33 % of immigrant employment

E/CN.17/1999/6/Add.11

Location	*Goals*	*Favourable key factors*	*Problems encountered*	*Measures adopted*	*Successful outcomes*
Dominican Republic	Promoting tourism development in the island	Human, natural and cultural assets Long-standing tradition of tourism and financing of tourism facilities	Infrastructure shortage Social imbalance and migration Adverse environmental impact and landscape degradation Proliferation of unplanned settlements	Construction of hotels on the seafront Large private purchases of cheap land in undeveloped locations, private sector taking responsibility for building access and local transport infrastructure Expropriation of 160 hectares, financing and infrastructure development by the World Bank, subsequent sale of land to promoters	Increased number of visitors Socio-economic development boosted (48% of foreign exchange) Significant direct and indirect employment created
South Pacific islands micro-States	Controlled expansion of the sector with a commitment to alternative sustainable tourism development	Novel alternative to the mass tourism model Criteria: adaptation to local realities, preservation of natural and cultural heritage	Difficulties relating to access to the islands Limitations and fragility of the islands' environment Vulnerability to natural disasters	Maintenance of indigenous activities and self-supporting family agriculture Incentives for involvement in local business and for integration with the rest of the island economy Strategies to control growth of sector development in balance with the islands' infrastructure, values, cultures	Slow, controlled growth Contribution to the economy: 6% of revenues 10-15% of employment in 1993

Location	*Goals*	*Favourable key factors*	*Problems encountered*	*Measures adopted*	*Successful outcomes*
Bonaire (Netherlands Antilles)	Promotion of tourism without overloading the island's carrying capacity	Well preserved natural scenery Good climate all year round Uncrowded living environment Hospitable nature of its local community	Visible environmental impact along the coast	Tourism master plan Measures to protect the island's natural systems Promotion of measures to provide for the tourist market A seven-year moratorium on new construction Incentives for the modernization of the existing facilities Encouragement of use of local resources Information for preserving ethnic cultures Legal, institutional and organizational changes	Environmental impact minimized Sector prospered

Source: F. Pratz, "Tourism, environment and sustainable development in islands: 15 ideas and nine cases for debate", paper presented at an international conference on sustainable tourism in small island developing States and other islands, Lanzarote, Canary Islands, October 1998.

Annex II

Major initiatives for sustainable tourism development in small island developing States, by target area

Target area	*Country/geographical area/organization*	*Action planned/taken*	*Realized/expected outcomes*
Regional cooperation	Caribbean region	Finalization of the Cartagena Convention in the wider Caribbean region	Prevention, reduction and control of marine pollution from land-based sources and activities
	OECS/Eastern Caribbean	Creation of a technical committee on sustainable tourism development in 1998	Strategy and plan of action for the development of sustainable tourism in the Caribbean
	Caribbean islands	Establishment of a code of conduct for the prevention of pollution from small ships	Compliance to the requirements of the MARPOL 73/78 Convention
Use of economic instruments	Bonaire Marine Park (Netherlands Antilles)	Levying of admissions fees on scuba divers	Generation of revenue to support ongoing active management of the park natural ecosystems, as well as educational activities for divers; minimization of the impact on reefs
	Seychelles	Plan to introduce a US$ 90 tax on travellers	Generation of revenue to preserve the environment and improve tourism facilities
Capacity-building	Asia and Pacific region (Economic and Social Commission for Asia and the Pacific)	Establishment of Asia-Pacific Education and Training Institute in Tourism	Self-financing through the levying of admissions fees on scuba divers; fees support ongoing active management of the park natural ecosystems, as well as educational activities for divers
	Caribbean (UNEP)	Development of the Caribbean Environment Network by the Consortium of Caribbean Universities for Natural Resources Management	Provision of special training to civil servants and private entrepreneurs on the main scientific principles governing coastal areas
	Jamaica (USAID funds)	Implementation of environmental audits for sustainable tourism by the Jamaica Hotel Association	Increased environmental awareness of the hotel sector and technical skills of Jamaicans performing the audits

Target area	*Country geographical area organization*	*Action planned taken*	*Realized expected outcomes*
Policy and strategy at national level	Cyprus	Introduction of a new tourism development policy (1990) and further measures in 1995	Controlled development, diversification and enrichment of the tourism product, protection and enhancement of natural, social and cultural environment
	Saint Lucia	Formulation of policies for the tourism product; a five-year strategy and millennium action plan	Successful marketing of Saint Lucia as a tourist destination, effective guidance to the tourism industry, including priority actions by the industry for environmental protection
	Solomon Islands/Marovo Lagoon Community	Ecotourism association established by the community	Concentration of development on local enterprises, such as ecotourism lodges and sustainable fisheries ventures
Participation of local communities	Saint Lucia	Involvement of a locally based NGO in the management of the Soufrière marine management area	A study to identify and design appropriate regulatory instruments, alongside a national process leading to the development of an overall legislative base for management of Saint Lucia's coastal zone
	Jamaica/Blue and John Crow National Park	Involvement of local communities in advising park managers through local advisory committees	Gradual development of tourism in the park, as one means through which the park can generate revenues

Source: UNEP data.

Annex III

Selected indicators of tourism in small island developing States

Countries or areas	*Tourist receipts population, 1996 (United States dollars)*	*Tourist receipts as percentage of exports of goods and services, 1995*	*Tourist receipts as percentage of GDP, 1995*	*Tourist receipts: average annual growth rate, 1993–1997 (percentage)*
Africa				
Cape Verde	26	12	2.5	2.67
Comoros	420	46	8.3	5.74
Mauritius	441	18	13.2	10.85
Sao Tome and Principe	15	..	3.6	0.00
Seychelles	1 338	36	22.3	1.27
Caribbean				
Antigua and Barbuda	3 671	..	62.8	-1.57
Aruba	6 913	26	..	5.11
Bahamas	5 179	76	38.2	3.73
Barbados	2 537	58	39.8	7.95
Cuba	111	..	7.2	20.43
Dominica	514	..	19.1	6.28
Dominican Republic	232	28	18.1	14.02
Grenada	667	..	27.5	6.17
Haiti	11	42	3.8	0.63
Jamaica	430	34	24.0	4.68
Netherlands Antilles	..	..	..	..
Saint Kitts and Nevis	1 675	..	164.4	0.72
Saint Lucia	1 681	..	68.0	5.13
Saint Vincent	582	37	23.3	10.25
Trinidad and Tobago	823	3	1.3	7.46
United States Virgin Islands	66 800	..	..	-9.65
Mediterranean				
Cyprus	2 257	43	25.7	3.68
Malta	1 717	22	22.2	1.57
Asia/Pacific				
Bahrain	437	5	5.6	4.03
Cook Islands	2 500	..	64.3	10.95
Fiji	3 738	26	17.0	8.17
Kiribati	13	..	2.4	18.92
Maldives	985	66	4.0	18.41
Marshall Islands	50	..	4.2	7.46
Micronesia (Federated States of)	..	..	..	..
Nauru	..	..	..	..
Niue	100	..	..	..
Palau	..	..	..	..

Countries or areas	*Tourist receipts/ population, 1996 (United States dollars)*	*Tourist receipts as percentage of exports of goods and services, 1995*	*Tourist receipts as percentage of GDP, 1995*	*Tourist receipts: average annual growth rate, 1993-1997 (percentage)*
Papua New Guinea	155	2	1.3	12.47
Samoa	229	56	19.4	17.48
Singapore	2 627	6	15.2	6.16
Solomon Islands	33	..	2.6	21.32
Tokelau	..	..	..	..
Tonga	130	..	8.2	8.78
Tuvalu	30	..	..	..
Vanuatu	294	53	32.8	-1.87

Source: World Tourism Organization.

Note: Two dots (..) indicate that data are not available or are not reported separately.

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Addendum

Sustainable development of energy resources in small island developing States*

Contents

		Paragraphs	Page
I.	Introduction	1–3	2
II.	Energy demand	4–8	2
III.	Use of renewable energy sources	9–12	3
IV.	Energy resources development: options and recommendations	13–17	4

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I. Introduction

1. Despite the fact that an accelerated increase in the availability of energy services in small island developing States is critical to foster their economic growth and thus to improve the welfare of people, there has been little or no progress made in this regard in the majority of those countries. As a matter of fact, several of them have registered declines in per capita consumption of primary commercial energy during the period 1992–1995, the result of economic factors and slower rate of increase of energy supply compared with demand associated with expanding population.

2. However, efforts have continued, primarily through international assistance programmes, to develop and use renewable energy sources. Solar photovoltaic (PV) home systems for lighting, radio/television and telecommunication, particularly in remote locations, have increased in absolute terms.

3. Nevertheless, imported petroleum remains the chief source of commercial energy in small island developing States. A number of small island developing States continue to rely heavily on traditional forms of biomass energy, especially wood fuels for cooking and in a variety of small-scale agricultural processing. With regard to traditional biomass fuels, their sustainable levels and efficient use are matters of concern for all those countries with heavy dependence on such fuels.

II. Energy demand

4. Imported petroleum, mainly end-use products, remains the chief source of primary commercial energy, largely for transport and electricity generation. During the period 1992–1995, total petroleum consumption of small island developing States increased by an average annual rate of 3.7 per cent, to a total of about 58.5 million tons of oil in 1995. Their daily demand in 1995 was about 1.17 million barrels of oil, out of a total world consumption of more than 68.18 million barrels per day in 1995, or about 1.7 per cent of the world total. The total daily petroleum demand of small island developing States excluding island countries or areas with substantial oil and gas production and with major export-oriented oil refineries (Bahrain, Papua New Guinea, Trinidad and Tobago, the Netherlands Antilles, Singapore and the United States Virgin Islands) was even less significant. In 1995, it was about 407,000 barrels per day, or about 0.6 per cent of the total daily world oil demand.

5. While overall petroleum consumption of small island developing States increased, a number of them registered negative or no growth in their total oil consumption during 1992–1995. During this period, many small island developing States experienced declines in per capita consumption of commercial primary energy (see table 1).

6. Inasmuch as energy conservation and efficiency programmes can be of great benefit in managing demand, implementation of such measures in small island developing States has been sporadic and much remains to be done. On the supply side, given the predominance of petroleum products in the commercial energy mix, reduction of losses in storage and in transit would result in tangible gains. Efforts are also needed to improve the efficiency of electricity generation and distribution. On the demand side, the focus should be on improving the energy efficiency of electrical appliances and motor vehicles. Considerable benefits can be derived from simple conservation measures, such as proper operation and maintenance of equipment and replacement of inefficient appliances. To realize those goals, institutional capacity, policy and financing instruments, and manpower need to be strengthened.

7. As regards the ratio of petroleum imports to total merchandise exports including petroleum products, in most of the small island developing States it remains comparatively higher than in other developing countries and has remained practically unchanged since 1992. There have been some declines in the share of petroleum imports in total merchandise imports, although in a few countries the ratio has actually increased significantly (see table 2).

8. A majority of small island developing States continue to depend heavily on traditional forms of biomass energy, fuelwood, charcoal and bagasse, particularly in rural areas, accounting for more than 50 per cent of total energy demand in many of them. Almost all fuelwood for cooking, especially in rural households, are obtained at no financial cost from natural forests but at considerable social cost. Also widely used are coconut shells, husks and stemwood, and residues from such crops as coffee, cocoa, maize, cassava, peanuts and rice. The challenge is to use these efficiently. In small island developing States with large-scale sugar cane plantations, bagasse is used for fuel in sugar mills and for electricity generation. Introduction of bagasse cogeneration systems needs to be pursued.

III. Use of renewable energy sources

9. In absolute terms, the use of modern renewable energy technology has increased, particularly solar PV systems, enabling households in small remote villages to operate a few electric lights and small appliances, such as televisions and video cassette recorders, small medical refrigerators, telecommunication equipment and water pumps.

10. In a number of small island developing States, the use of small-scale solar PV power in rural electrification appears to have been successful. Those experiences suggest that solar PV can play a useful role in meeting the demand for electricity in isolated pockets of low-load densities. In such situations with small loads typical of rural households in remote areas, PV power would prove to be more economical compared with diesel-based systems. With the fast-declining capital costs of PV panels, solar PV systems are likely to be cheaper than diesel systems with their higher variable costs, given that diesel fuel is relatively more costly in small island developing States remote from main petroleum products supply points. The life cycle cost advantages of solar PV systems could even be greater where consumers are increasing steadily over time, as it would apparently be easier to install additional solar PV systems, which are largely modular, than to install diesel systems, which invariably have to be sized from the outset for anticipated load growth.

11. The attractiveness of solar PV home systems from the user's perspective is that the current capital costs of installing the systems, especially in rural electrification programmes, are heavily subsidized by government or donor agencies. In such cases, solar PV systems are very attractive to users because they do not have to bear the capital costs, and also because solar PV systems have very low operation and maintenance costs compared to diesel systems. Currently, very few if any renewable energy sources are being developed on a commercial basis in small island developing States, and if the increased use of solar PV systems continues to depend on public funding and external assistance, effective institutional approaches must be developed. A number of different institutional arrangements have been tried but most have failed, although the approach that involves a professional agency run on a commercial basis installing the system and providing maintenance on a fee-for-service basis appears to be relatively successful. The availability of financing and credit facilities can contribute significantly to the commercialization of renewable energy applications.

12. Technological constraints in the use of solar PV systems appear to have been overcome by the increased robustness of currently available household size systems, with proper installation and adequate maintenance. Nonetheless, technical viability must be complemented by effective institutional arrangements to ensure sustained success in the use of solar PV systems.

IV. Energy resources development: options and recommendations

13. Based on the experiences of the past 20 years, it is evident that while the energy strategies of the small island economies will continue to remain primarily focused on improving the management and regulation of petroleum fuels and electric power plants, increasing the role for renewable energy should become an important part of the overall strategy in many small island developing States. Since energy conservation and efficiency measures are the most effective ways to achieve significant savings in energy consumption, concerted efforts supported by external assistance are needed to promote and implement these measures.

14. The almost total dependence of small island developing States on imported petroleum for their commercial energy needs continues to cause severe imbalances in trade. Increased use of fuelwood has led to much deforestation. To arrest those adverse developments, small island developing States will need to increase their efforts in the development and use of indigenous renewable energy resources. In their efforts to harness renewable energy sources, small island developing States will need enhanced technical, managerial, financial and particularly external assistance to make the necessary investments.

15. The development of renewable energy sources will depend not only on the choice of appropriate technology but also on adequate development of managerial and technical expertise, careful financial management and adoption of appropriate institutional approaches. For small loads typical of rural households in remote areas with sufficient insolation, solar PV systems are proving to be economically and technically successful, when complemented by an institutional approach, including financial arrangements, that provides for the installation of the systems and maintenance on a fee-for-service basis.

16. Major technical advances in recent years have led to much improved cost-effectiveness of renewable energy technologies providing more opportunities for commercial use of those technologies. Adequate wind regimes exist in many small island developing States, although wind energy remains underutilized. Similarly, hydropower resources are being utilized where adequate sites and institutional support are available. Several small island developing States also have sustainable biomass cover for the development of modern biomass energy.

17. Assistance should continue to be provided, where appropriate, in the formulation of energy policies, technical standards and guidelines for the energy sector of small island developing States and to enhance national capacity to effectively plan and manage their energy systems.

Table 1
Total and per capita primary energy consumption, 1982–1995

Country or area	Total energy consumption (thousands of tons of oil equivalent)					Per capita consumption (kilograms of oil equivalent)				
	1982	1992	Annual change 1982–1992 (percentage)	1995	Annual change 1992–1995 (percentage)	1982	1992	Annual change 1982–1992 (percentage)	1995	Annual change 1992–1995 (percentage)
Atlantic										
Cape Verde	34	36	0.5	36	0.0	110	101	-0.8	98	-0.8
Sao Tome and Principe	12	25	6.7	26	1.0	135	202	3.7	195	-0.9
Indian Ocean and adjacent areas										
Comoros	12	22	5.5	23	1.1	29	39	2.7	38	-0.6
Maldives	6	50	19.4	62	5.5	37	217	16.2	244	3.0
Mauritius	170	448	8.8	505	2.7	171	421	8.2	452	1.8
Seychelles	28	50	5.3	54	1.4	406	718	5.2	740	0.8
Pacific										
Cook Islands	12	7	-4.9	7	0.0	632	368	-4.9	368	0.0
Fiji	256	253	-0.1	267	1.4	393	339	-1.3	341	0.1
Kiribati	9	7	-2.3	7	0.0	150	93	-4.3	90	-0.8
Marshall Islands	..	..	..	..	..	..	..	..	..	..
Micronesia (Federated States of)	..	..	..	..	..	..	..	..	..	..
Nauru	40	44	0.9	45	0.6	5 714	4 400	-2.4	4 091	-1.8
Niue	1	1	0.0	1	0.0	250	500	6.3	500	0.0
Northern Marianas	..	..	..	..	..	..	..	..	..	..
Palau	50	82	4.5	83	0.3	352	363	0.4	342	-1.8
Papua New Guinea	667	784	1.5	856	-0.3	195	216	0.9	199	-2.0
Samoa	39	45	1.3	46	0.6	244	278	1.2	279	0.1
Solomon Islands	41	53	2.3	53	0.0	165	155	-0.6	140	-2.5
Tokelau	..	..	..	..	..	..	..	..	..	..
Tonga	14	30	6.9	35	3.9	139	309	7.3	357	3.7
Tuvalu	..	..	..	..	..	..	..	..	..	..
Vanuatu	17	20	1.5	20	0.0	134	127	-0.5	118	-1.8
Caribbean										
Antigua and Barbuda	83	96	1.3	108	3.0	1 078	1 477	2.9	1 636	2.6
Aruba	..	213	..	279	7.0	..	3 853	..	3 986	0.9
Bahamas	828	602	-2.9	565	-1.6	3 851	2 275	-4.8	2 025	-2.9
Barbados	210	328	4.1	312	1.4	814	1 274	4.0	1 195	-1.6
Cuba	10 303	8 717	-1.5	9 023	0.2	1 046	829	-2.1	823	-0.2
Dominica	13	21	4.4	29	8.4	173	296	4.9	408	8.4
Grenada	20	40	6.3	57	7.3	183	473	8.7	620	7.0
Haiti	223	244	0.8	220	-4.2	37	39	0.5	31	-5.6

Country or area	Total energy consumption (thousands of tons of oil equivalent)					Per capita consumption (kilograms of oil equivalent)				
	1982	1992	Annual change 1982–1992 (percentage)	1995	Annual change 1992–1995 (percentage)	1982	1992	Annual change 1982–1992 (percentage)	1995	Annual change 1992–1995 (percentage)
Jamaica	1 917	2 604	2.8	2 959	3.7	861	1 065	1.9	1 199	3.0
Netherlands Antilles	2 444	923	-8.8	850	-2.1	9 660	4 874	-6.2	4 381	-2.6
Saint Kitts and Nevis	21	25	1.6	32	6.4	467	595	2.2	780	7.0
Saint Lucia	36	57	4.2	64	2.9	293	416	3.2	451	2.0
Saint Vincent and the Grenadines	15	31	6.6	44	10.0	149	275	5.6	393	9.3
United States Virgin Islands	2 812	2 266	-2.0	2 739	4.4	28 120	22 379	-2.1	26 806	4.6
Mediterranean										
Cyprus	831	1 446	5.0	1 518	1.2	1 292	2 051	4.2	2 038	-0.2
Others										
Bahrain	3 360	5 514	4.5	6 910	6.5	8 842	10 388	1.5	12 406	4.5
Singapore	10 496	16 482	4.1	20 056	5.0	4 239	5 244	1.9	6 028	3.5
Trinidad and Tobago	4 549	7 458	4.5	6 759	-2.5	4 208	5 948	3.2	5 252	-3.1

Note: Two dots (..) indicate that data are not available or are not available separately.

Source: Department of Economic and Social Affairs of the United Nations Secretariat, based on United Nations, *Energy Statistics Yearbook, 1984* (United Nations publication, Sales No. E/F.86.XVII.2) and United Nations, *Energy Statistics Yearbook, 1995* (United Nations publication, Sales No. E/F.97.XVII.8).

Table 2
Share of petroleum imports in total merchandise imports and exports, 1992 and 1995

Country or area	1992[a]						1995[a]					
	Net petroleum imports (thousands of tons of oil equivalent)	*Petroleum imports (millions of United States dollars)[b]*	*Total merchandise imports (millions of United States dollars)*	*Petroleum imports (percentage of total imports)*	*Total merchandise exports (millions of United States dollars)*	*Petroleum imports (percentage of total exports)*	*Net petroleum imports (thousands of tons of oil equivalent)*	*Petroleum imports (millions of United States dollars)[b]*	*Total merchandise imports (millions of United States dollars)*	*Petroleum imports (percentage of total imports)*	*Total merchandise exports (millions of United States dollars)*	*Petroleum imports (percentage of total exports)*
Atlantic												
Cape Verde	36	4.41	180.0	2.45	5.00	88.14	38	4.35	210.00	2.07	5.00	87.0
Sao Tome and Principe	25	3.06	..	..	..	..	26	2.98	..	..	..	..
Indian Ocean and adjacent areas												
Comoros	22	2.69	69.00	3.90	22.00	12.24	23	2.63	..	..	..	..
Maldives	85	10.41	189.00	5.51	40.00	26.01	112	12.83	268.00	4.79	50.00	25.7
Mauritius	690	84.47	1 623.00	5.20	1 290.00	6.55	785	89.91	1 959.00	4.59	1 537.00	5.9
Seychelles	161	19.71	192.00	10.27	44.00	44.80	168	19.24	233.00	8.26	53.00	36.3
Pacific												
Cook Islands	15	1.84	59.00	3.11	3.00	61.21	15	1.72	..	..	..	..
Fiji	401	49.09	624.00	7.87	435.00	11.29	404	46.27	867.00	5.34	619.00	7.5
Kiribati	7	0.86	37.00	2.32	5.00	17.14	7	0.80	34.00	2.36	7.00	11.5
Marshall Islands	..	..	..	..	..	..	..	..	..	..	..	..
Micronesia (Federated States of)	..	..	..	..	..	..	..	..	..	..	..	..
Nauru	49	6.00	..	..	..	..	50	5.73	..	..	..	..
Niue	1	0.12	..	..	..	..	1	0.11	..	..	..	..
Palau	94	11.51	..	..	..	..	95	10.88	..	..	..	..
Papua New Guinea	..	..	1 523.00	..	1 790.00	..	..	82.92	1 452.00	..	..	3.1
Samoa	45	5.51	113.00	4.88	6.00	91.82	44	5.04	95.00	5.30	9.00	56.0
Solomon Islands	53	6.49	97.00	6.69	84.00	7.72	55	6.30	142.00	4.44	168.00	3.8

Country or area	1992[a]						1993[a]					
	Net petroleum imports (thousands of tons of oil equivalent)	Petroleum imports (millions of United States dollars)[b]	Total merchandise imports (millions of United States dollars)	Petroleum imports (percentage of total imports)	Total merchandise exports (millions of United States dollars)	Petroleum imports (percentage of total exports)	Net petroleum imports (thousands of tons of oil equivalent)	Petroleum imports (millions of United States dollars)[b]	Total merchandise imports (millions of United States dollars)	Petroleum imports (percentage of total imports)	Total merchandise exports (millions of United States dollars)	Petroleum imports (percentage of total exports)
Tokelau	..	..	..	..	..	..	..	..	..	..	..	..
Tonga	33	4.04	63.00	6.41	12.00	33.67	38	4.35	77.00	5.65	15.00	29.0
Tuvalu	..	..	..	..	..	..	..	..	..	..	..	..
Vanuatu	20	2.45	83.00	2.95	20.00	12.24	20	2.29	95.00	2.41	28.00	8.2
Caribbean												
Antigua and Barbuda	96	11.75	246.00	4.78	40.00	29.38	158	18.10	..	..	..	..
Aruba	564	69.05	481.00	14.35	26.00	265.56	591	67.69	..	..	..	..
Bahamas	753	92.18	1 038.00	8.88	192.00	48.01	2 835	324.71	1 243.00	26.12	176.00	184.5
Barbados	328	40.15	521.00	7.71	190.00	21.13	308	35.28	766.00	4.61	238.00	14.8
Cuba	8 370	1 024.66	2 185.00	46.90	2 050.00	49.98	8 792	1 007.01	2 825.00	35.65	1 600.00	62.9
Dominica	21	2.57	111.00	2.32	56.00	4.59	27	3.09	96.00	3.22	45.00	6.9
Dominican Republic	3 422	418.92	2 501.00	16.75	562.00	74.54	3 617	414.28	2 976.00	13.92	765.00	54.2
Grenada	40	4.90	107.00	4.58	20.00	24.48	58	6.64	..	..	..	..
Jamaica	2 604	318.78	1 675.00	19.03	1 097.00	29.06	2 813	322.19	2 756.00	11.69	1 380.00	23.3
Netherlands Antilles	923	112.99	1 868.00	6.05	1 559.00	7.25	850	97.36	..	..	..	..
Saint Kitts and Nevis	25	3.06	96.00	3.19	26.00	11.77	32	3.67	..	..	..	..
Saint Lucia	57	6.98	313.00	2.23	123.00	5.67	64	7.33	..	..	..	..
Saint Vincent and the Grenadines	31	3.80	132.00	2.88	78.00	4.87	42	4.81	136.00	3.54	43.00	11.2
United States Virgin Islands	2 266	277.41	..	..	..	..	2 739	313.72	..	..	..	..
Mediterranean												
Cyprus	1 446	177.02	3 289.00	5.38	1 002.00	17.67	1 989	227.81	3 690.00	6.17	1 229.00	18.5

Country or area	1992[a]						1995[a]					
	Net petroleum imports (thousands of tons of oil equivalent)	Petroleum imports (millions of United States dollars)[b]	Total merchandise imports (millions of United States dollars)	Petroleum imports (percentage of total imports)	Total merchandise exports (millions of United States dollars)	Petroleum imports (percentage of total exports)	Net petroleum imports (thousands of tons of oil equivalent)	Petroleum imports (millions of United States dollars)[b]	Total merchandise imports (millions of United States dollars)	Petroleum imports (percentage of total imports)	Total merchandise exports (millions of United States dollars)	Petroleum imports (percentage of total exports)
Others												
Bahrain	..	..	4 125.00	..	3 368.00	..	..	..	3 626.00	..	4 044.00	..
Singapore	16 482	2 017.74	72 534.00	2.78	63 516.00	3.18	20 256	2 320.06	124 502.00	1.86	118 263.00	2.0
Trinidad and Tobago	..	..	1 168.00	..	1 691.00	..	..	..	1 714.00	..	2 456.00	..

Note: Two dots (..) indicate that data are not available or are not available separately.

Source: Department of Economic and Social Affairs of the United Nations Secretariat, based on United Nations, *Energy Statistics Yearbook, 1995* (United Nations publication, Sales No. E/F.97.XVII.8) and *Statistical Yearbook*, No. 42 (1997) (United Nations publication, Sales No. E/F.97.XVII.1).

[a] Petroleum prices for 1992 (US$16.77 per barrel) and 1995 (US$15.69 per barrel) were weighted average cost insurance freight (CIF) costs of imports of member countries of the International Energy Agency; CIF costs of petroleum imports of several small island developing States may be higher considering the supply distances.

[b] Estimated.